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Housing and Human Settlement Issues in Sparsely Populated Areas of the World as Related to the Development of Housing Policies for the Native People of Canada

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severe climatic conditions, wind storms, extreme diurnal temperature drops, scant vegetation and isolated pockets of human settlements.

The ability of native populations to cope with these harsh climates is attributable to their capacity to adapt - to survive. However, intervening development programs using sophisticated, alien technologies can irreparably upset these established social orders. The imposing force of the new technology's bureaucracy and architecture is discussed in the next section.

Bureaucracies and Architecture: Partners in Colonialism

Two of the most prominent forces which shape our environment are bureaucracies and architectural space, specifically avant garde architecture.

Moshe Safdie[1] described modern architecture as a form of "internal colonialsim," a shaper of our working and living environments. In addition to this inner control borne out by the built environment he described an "external colonialism," the bureaucracy, which directly imposes policy statements and imlementation strategies upon its populace. While it is apparent that a balance between these partners in "colonialism" must exist for optimal developments, one must first have a knowledge of their raison d'être.

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[1]Moshe Safdie is a practicing architect and town planner and Dean of Architecture at Harvard University.

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Introduction

Since the framework of this report has been restricted to housing and human settlement issues in developing areas of the world, on occassion the terms development, housing and design have been used interchangeably. Development, throughout this paper, refers to the global impact of an intervening technology (macro level), whilst design connotes the mechanical and mental processes of architectural and siting details (micro level). Housing is taken to mean all mannerisms of shelter and their respective delivery systems. These subjectively interpreted definitions were used to assure a reasonable degree of brevity and similarly reduce semantical problems.

This paper focuses on some of the fundamental concerns facing development projects and human settlements in harsh climates. While attempting to define a philosophy of development, considerable attention has been paid to the contextual framework and the institutional process. The latter part of this report describes housing as a part of the social contract, a right and a cultural entity.

Despite the vast temperature differential existing between the Negev desert of Israel and the Arctic tundra of Canada these two regions have a great deal in common. Both regions experience

It was argued by Bruno Zevi[2] that a desert architecture technology does not exist - it is merely architecture under severe conditions. Hence, habitable housing in harsh climates demands scrutinous attention to details which would otherwise be taken for granted in temperate environments. Architectural and siting details must be environmentally sensitive whilst being functional at a locally prescribed social (human) level.

Owing to the impact extreme climates have upon building structures; e.g. high winds, freeze-thaw cycles and high solar gains, the critical attention to detail, throughout the design stage, can not be overstated. Housing delivery systems must provide units capable of withstanding the elments for at least the duration of the mortgage or an equally realistic pay-back period. Especially in developing regions architects must pay particular attention to devise the means to minimize the disruptive pressures of their building technology, social and psychological stress and physical/environmental degradation.

Successful development, it must be stressed, is more than just growth and technological advancement; there is a fundamental requirement for extensive social planning to meet educational, medical and cultural needs of the resident populations. Post-modern architects who have had an obsession with material design and style have only served to perpetuate an anonymous design. Such "drop-in" architecture generally bears little relation to local climate, lifestyle and culture. This arrogant indifference

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[2]Bruno Zevi is the Dean of Architecture at the University of Rome.

towards the local physical and social environments may manifest itself in rashes of vandalism, unexpectedly short project life-cycles as well as varying psychological disorders experienced by the residents of this alienating environment. Architects, designers and planners must cast off their lofty ideas and start designing in accord with local circumstances. Design/development teams' efforts ought to be directed towards understanding the environment - not conquering it and thus be in a position to establish a harmony of design not dissimilar to that of vernacular architecture.

As with urban architecture, urban bureaucracies can not simply and successfully be juxtaposed in a desert environment. Bureaucracies, being the authorities of implementation, tend to be irresponsive to individuals. Their broad implementation strategies make them unwieldy on an individual level. Hence, their political underpinnings to serve the individual and the community at-large are often compromised. In regions experiencing adverse climatic conditions the added burden of a slow moving and/or irresponsive bureaucracy can make existence intolerable. This condition becomes even more acute when the bureaucracy is imposed upon a people by "outside" interests. It might be said that the severity of the climate is directly proportional to the amount of attention planners, architects and engineers must pay to details ordinarily considered trivial e.g. water delivery and waste water collection services, provision of frost-resistant windows and affordable energy systems.

Where Technology is Master, Disaster is Faster[3]

Both traditionally and tragically technology has simultaneously bolstered the geopolitical structure[4] and indirectly eroded its base by returning a disproportionate amount of the benefits to the socio-economic system. Technology and the pursuit of wealth have been responsible for the redistribution of local labour from traditional employment into increasingly more concentrated societies. The ensuing permanent cleavages of family and friendship ties can rob communities of their purpose and identity, rendering them amorphous, technologically subservient units. Under these conditions the once attractive panacea, technology, is since perceived as a threat to local social values and one's own self-respect. This paradox of development requires constant monitoring to ensure that growth is socially compatible and not gauged soley on economic merit. In short, "where technology is master, disaster is faster."

The duality of growth and enslavenment which techology imparts to developing areas must beome technically and socially adaptive. The possibility of growth without migrations, stated Dr. Weitz[5], must be explored. Where applicable, the geographic mobility of resources, rather than the social mobility of people, need be

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[3]Anthony Penning, is the President of the International Technical Cooperation Centre (ITCC).

[4]Geopolitical structure refers to the resource extraction industries represented by the political economy.

[5]Ra'anan Weitz, Head, Settlement Study Centre, Rehovot, Israel.

encouraged to reduce unnecessary disruptions of family life, friendship linkages and the community fabric. Even under these preferred circumstances the latent impact of technology will affect the functional unity of the developing community by virtue of its job creation capacity, financial remunerations and concommitantly affect the local "pecking order". Ideally, such technologically induced disruptions can be reduced once they have been identified and quantitifed. Using simulation models, hierarchies of impact can be generated providing planning and design teams with optimal solutions - given the available information. Historically 'change' in deserts and environmentally severe regions has been inextricably linked to adaptation and survival, therefore solutions too must be adaptive and compassionate with people and their environment.

The Three D's of Development: Demystifying, Designing and Decentralizing

Development projects in desert and sparsely populated areas are invariably promoted and operated by non-residents of the project community. They import with their physical development plans alien lifestyles, a "colonial" bureaucracy and teams of scientists, engineers and technicians vaguely familiar with the local environment.

Vernacular architecture may be likened to an architectural Darwinism. Based upon their particular social, spiritual and physical needs societies built (build) structures typical of their respective culture. The lengthy process of adapting these struc-

tures to climatic, environmental and cultural factors was based on trial and error, or survival of the fittest structure. Hence, vernacular architecture represents a proven historic and scientific process of shelter design based upon rudimentary hypotheses, empirical testing and an environmental sensitivity. Despite its environmental compatability and functionalism, this knowledge system is seldom appreciated in light of current design principles.

Contemporary architectural solutions do not necessarily yield satisfactory or functional habitats. The importation of concepts which bear little respect to the social and physical environments is arrogant and damaging to the housing delivery/design process. Therefore, developers/designers must strive to comprehend local conditions, local solutions and the local culture before development strategies are either conceptualized or implemented. The processes of town planning and shelter design must be demystified by the respective sharing of knowledge systems between the developer and the developing societies. Alternatives to, or simplified forms of, the comprehensive planning model may be devised to ensure the layman's comprehension of the scheme and his participation in it.

In developing regions design opportunities must be made accessible to the native population. Accessible, in this context, is defined as: conceptually comprehensible; physically attainable (participatory design); and having localy prescribed, interpreted and enforced standards. As an intervening and disruptive force,

design (technology) must assume a purposeful role as a communicator. Design must effectively bridge the priorities and needs of the resident population with those of the developing agent whilst instilling in each a motivating force, an emotional ideology. To quote Bruno Zevi, "Technology without context produces pessimism and failure." Hence, development (design) must proceed cautiously so that it can be adaptive and responsive - not painfully scientific, efficious and alien to the local people.

Decentralized approaches to project design and development offer higher probabilities of acceptance and success than do externally controlled central bureaucracies. Cost effectiveness and economies of scale afforded by centralized bureaucracies can prove to be of marginal benefit in comparison to the intangible assets of local involvement in and local appreciation of the project.

Suitcase planning and design teams are often resented by virtue of their insular character, singular objectives, and vital control of the community from hundreds - even thousands of miles away. The project, already experiencing severe climatic conditions, need not be subjected to additional hostilities from the community. Hence, development projects, "... are in need of good communicators not good commuters." (Bar-Cohen)[6] The dilemma of top-down and bottom-up management ought to be massaged into a healthy working relationship in accord with local conditions. The involvement of local political bodies (planning boards, town councils etc.) and interested parties throughout the project

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[6]Bar-Cohen, speaker at conference - no further information available.

planning stage would theorectically demystify the project and generate a considerably greater degree of local acceptance. Although the "three d's" do not guarantee project success, they do provide a logical approach to secure plan acceptance in an already inhospitable climatic environment. By clarifying project objectives, simplifying the institutional process and encouraging local involvement the probability of project longevity is appreciably increased.

Housing - Right or Resource: A Value (Cultural) Judgement

Local housing, recreation, medical and educational services, already limited on remote communities, are severely impacted by the duresse of development. Competition for vital services between the cash-poor residents and the cash-rich transient work force may arise rendering these services both financially and physically inaccessible to the former.

In remote areas, housing - the provision of shelter - is perceived as a right and vital for survival. However, in regions confronted with development pressures and a scarcity of housing, housing assumes a different value - it becomes a resource, a commodity with a price.

Economic enslavenment, cultural compromise and the overall reduction of quality of life may result from induced value changes. Seemingly minor value fluctuations can destabilize indigenous value systems making them prone to toppling due to the "domino-effect." Subsequently, all facets of lifestyle, perception and need would be affected. This acculturative and debilitating

process has plagued the native people of Canda since the sixteenth century when the first European - led explorers arrived in search of a Northwest passage from the Orient. Waves of expeditions in search of furs, precious metals and hydrocarbon reserves have persisted to-date with no lesser impact on the Native peoples.

Native housing policy must be compatible with local social, economic, and physical environments. The assessment of compatibility, needs and acceptable implementation strategies are subject to cultural and personal interpretation. Therefore, to eliminate unforeseen cross-cultural problems in native shelter design and housing policy, both client and patron ought to make their respective objectives clear, preferably in public meetings. Theoretically, this latent understanding of local systems and needs can indirectly reduce a project's operation and maintenance costs by increasing resident appreciation and the life-cycle of the dwelling unit.

Local native participation in the drafting of housing policy can serve to encourage their self-development. Participation could help bolster native self-respect and acceptance of the housing delivery process. Native invovlement in the process is a necessary but not a sufficient condition for this success. The system must adopt a decentralized, low-profile stance with local, regional and national representation. While being low profile (accessible), the delivery system should also be adaptive and capable of developing appropriate building standards. Similarly, appro-

priate technolgoies and affordable rental-purchase programs must be implemented. Dwelling units should be functional, operating harmoniously with climate and client.

Canadian housing projects destined for native and northern clients experience problems similar to those of other developing and sparsely populated areas of the world.

Conclusion

The difficulty in providing satisfactory housing to the native and northern peoples of Canada is complex. In remote areas the interfacing forces of severe climate, lack of locally available building materials, the high cost of construction and disparate cultural perceptions of need have necessitated taking a scientific approach to the housing delivery system. However, relocation programs and improved building technologies have inadvertently served to alienate the relocated persons and reduce their (perceived) quality of life.

Vernacular architecture, susceptible to the same environmental factors, provided indigenous populations with a shelter of a comparatively higher performance value. Although not necessarily of "better" construction, these shelters were environmentally sensitive, transportable and accomodated cultural values. This begs the question whether vernacular architecture's satisfactory performance was (is) based on the physical nature of the structure alone or the pride of construction, pride of ownership and pride of independence it may have elicited.

Housing progorams for native people in Canada and developing areas of the world must foster self-development. The sharing of knowledge and value systems, not the imposition of values and objectives, should be the stimulus of the housing delivery system. Public and political support in the form of transfer payments, subdued institutional interference, and collaboration at all levels of the process are essential elements to ensure the program's inertia. Even with the above considerations there is little hope to sustain viable housing projects without an endogenous housing ideology. Pride of ownership, pride of construction and the ensuing self-respect and independence can provide the needed kernels upon which to base a native housing ideology.

Human settlement and housing issues in harsh climates and sparsely populated areas share the same problems and propsects as those in temperate and urbanized regions. The difference is only one of degree. The severity of climate, remoteness of location and cultural disparities require that planning/development teams and bureaucracies exercise more patience, more caution and more compassion so that adaptive and successful programs may be delivered.